

**ABSTRACT**

DNA and protein sequences from *Xanthomonas campestris* pv. *campestris*, which may be targeted for activity reduction or enhancement using directed genetic engineering.

Transformed microorganisms having reduced activity of at least one protein, *e.g.*

5 galactomannanase, can be provided by disrupting a gene encoding the protein or introducing antisense nucleic acid sequence, providing xanthan gum essentially free of galactomannanase, amylase, cellulase or protease activity.

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